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REAL TIME STATISTICAL COMPUTATION IN EMBEDDED SYSTEMS

Abstract of the Disclosure

An effective technique for computing a statistical performance measure based on a samples of measured parameter values utilizes a one-time computation based on accumulations of the sum of the sample values and the sum of the squares of the sample values. The preferred embodiment computes variance and/or standard deviation, which can be used to compute other

5   useful performance statistics. Using the accumulated sums, instead of the actual sample values, eliminates the need to store all of the samples until after sampling and the subsequent calculation of the desired performance metrics. The one-time calculation is relatively simple and fast. Because of the reduced data storage requirement and the relatively simple calculation, it is possible to imbed the desired calculation functions in a manufactured device as an automated

10   self-analysis tool, for example, as a function of the processor of a disk drive or a tape drive.